UNIVERSITY AND EDUCATIONAL INTELLIGENCE

Alfred C. Haddon, B.A., Scholar of Christ's College, Demonstrator of Comparative Anatomy, and Curator of Zoology in the University of Cambridge, has been appointed Professor of Zoology at the Royal College of Science, Dublin.

The movement to found a college at Dundee has been revived, and at a meeting last week it was announced by Dr. Baxter, the Procurator-Fiscal, that he was in a position to place 125,000*l.* at the head of a subscription for the purpose. Owens College, Manchester, is proposed as the model of the Dundee Institution.

During recent years much has been done in Russia by private initiative for primary education in natural science. Now we notice the creation at St. Petersburg of a special institution, the aim of which is to devise and collect apparatus and drawings for the teaching of natural science in primary schools. A special collection of objects intended for the illustration of science will be sent from school to school by the Committee, and lectures will be given in each school on the subject.

The building of the new Siberian University is being briskly carried on. It will contain twenty large rooms for lectures, as well as spacious halls for the museum and library. The building for anatomy, as well as the hospital for clinical medicine, will be erected in accordance with the latest hygienic principles. A special building will be appropriated for the physical cabinet and the astronomical observatory.

The Moscow University is closed for an indeterminate time because of the disturbances among medical students, and three hundred students are incarcerated in the town prison.

SCIENTIFIC SERIALS

Journal of the Franklin Institute, December.—Boiler experiments, by Mr. Isherwood.—New electric motor, by Mr. Griscom.—The Sawyer electric light.—Proceedings of Institute, &c.

Bulletin de l'Academie Royale des Sciences de Belgique, Nos. 9 and 10.—Influence of liquids on the sound of sonorous bells which contain them or which are immersed in them, by M. Montigny.—On the chemical composition of the epidote of Quenast, by M. Renard.—On Caels and De Bennie, by M. Mailly.

No. 11.—On the compensation of a chain of geodetic triangles, by M. Adan.—Excretory apparatus of Trematodes and Cestode (3rd paper), by M. Fraipont.

Rivista Scientifico-Industriale, No. 21, November 15.—On spherohedry in crystallisation, by Prof. Bombicci.—On beats, the third sound of Tartini, &c. (concluded), by Dr. Crotti.

No. 22, November 30.—On some singular phenomena of geometrical optics, by Prof. Cassani.

Reale Istituto Lombardo di Scienze e Lettere. Rendiconti, vol. xiii. fasc. xvii., November 11.—On *Peronospora viticola* and the cryptogamic laboratory, by Prof. Garovaglio.—On measurement of the thermo-luminous radiations of the sun, by Dr. Chistoni.—Fourth series of researches and studies on the pelagic fauna of the Italian lakes (short *résumé*), by Prof. Pavesi.—The leprosy of Ancient Italy, especially of Comacchio, by Prof. Sangalli.

Kosmos, September 1880, contains :—Theodor Vuy, on the rehabilitation of shattered authorities ; considerations on the education of the future.—Dr. Ernst Krause, sketch of the development history of the history of development, No. 3.—Dr. H. Müller, on the variability of alpine flowers.—Leopold Einstein, apprehension and comprehension, a study in the philosophy of language.—Short notices and extracts from journals. Literary and critical notices.

October.—Prof. Fritz Schultze, the transformation of human fundamental conceptions on the threshold of modern times.—Prof. Dr. Hörnes, on phacops and dalmanites, genera of trilobites and their probable genetic connection.—George Potonié, on the purport of the stony particles to be found in the flesh of the pear and generally in the Pomaceæ.—Dr. Fritz Müller, *Paltostoma torrentium*, a gnat with two forms of females, one with a mouth for honey-sucking the other with a mouth for blood-sucking (with illustration).—Short notices and extracts from journals. Literary and critical notices.

SOCIETIES AND ACADEMIES

London

Chemical Society, December 16.—Prof. H. E. Roscoe, president, in the chair.—The following communications, &c., were made :—On the estimation of nitrogen by combustion, including the nitro-compounds, by J. Ruffle. The author recommends the use of the following mixture instead of soda-lime in the process of Will and Varrentrapp :—Two molecules of sodium hydrate, one molecule of pure lime, and one molecule of sodium hyposulphite ; the substance before burning being mixed with about its own weight of a mixture of sulphur and wood charcoal. By this process good results were obtained with sodium nitrate, picric acid, &c.—Dr. Carnelly then showed some experiments as to the effect of pressure in raising the melting-points of ice, camphor, and mercuric chloride. By suspending a cylinder of ice (formed round the bulb of a thermometer) in a Torricellian vacuum and condensing the aqueous vapour by a freezing mixture, so as to keep the vacuum perfect, the author has raised ice to 180° C. before it melted. In the experiment shown, through an accident, the temperature only rose to 30° C. before the cylinder fell off the thermometer. Camphor which was boiling in a tube solidified when the pressure was diminished, though the heating was continued. Mercuric chloride, which under diminished pressure had been raised considerably above its melting-point, melted and boiled as soon as it was exposed to atmospheric pressure.—On some naphthalene derivatives, by Dr. Armstrong and Mr. Graham.

Geological Society, December 15.—Robert Etheridge, F.R.S., president, in the chair.—William Elijah Benton, Rev. George Clements, J. Kerr Gulland, Francis T. S. Houghton, George Bingley Luke, and William Mansell MacCulloch, M.D., were elected Fellows ; and Prof. Luigi Bellardi of Turin, and Dr. M. Neumayr of Vienna, Foreign Correspondents of the Society. The following communications were read :—On the constitution and history of grits and sandstones, by John Arthur Phillips, F.G.S. In the first part of this paper the author described the microscopic and chemical structure of a large series of grits, sandstones, and in some cases quartzites, of various geological ages, noticing finally several sands of more or less recent date. The cementing material in the harder varieties is commonly, to a large extent, siliceous. The grains vary considerably in form and in the nature of their inclosures, cavities of various kinds and minute crystals of schorl or rutile not being rare. The author drew attention to the evidence of the deposition of secondary quartz upon the original grains, so as to continue its crystal structure, which sometimes exhibits externally a crystal form. This is frequently observable in sandstone of Carboniferous, Permian, and Triassic age. Felspar grains are not unfrequently present, with scales of mica and minute chlorite and epidote. Chemical analyses of some varieties were also given. The author then considered the effect of flowing water upon transported particles of sand or gravel. It results from his investigations that fragments of quartz or schorl less than one-fiftieth of an inch in diameter retain their angularity for a very long period indeed, remaining, under ordinary circumstances, unrounded ; but they are much more rapidly rounded by the action of wind. It is thus probable that rounded grains of this kind in some of the older rocks, as, for example, certain of the Triassic sandstones, may be the result of Æolian action.—The chair was then taken by J. W. Hulke, F.R.S., V.P.G.S.—On a new species of *Trigonia* from the Purbeck beds of the Vale of Wardour, by R. Etheridge, F.R.S., president ; with a note on the stratigraphical position of the fossil by the Rev. W. R. Andrews. In this paper the author described a species of *Trigonia* discovered by the Rev. W. R. Andrews in the "cinder-bed" of the Middle Purbeck series in the Vale of Wardour. The specimens were found in the railway-cutting one mile west of Dinton Station. The shell was referred to d'Orbigny's section "Glabræ" of the genus *Trigonia*, and named *Trigonia densinoda*. In its ornamentation it closely resembles *T. tenuitexta*, Lyc., of the Portland oolite, but is more depressed and lengthened posteriorly, and destitute of the antecarinal space which occurs in all known Jurassic "Glabræ." The escutcheon is remarkably large, and possesses transverse rugæ, as in the Neocomian "Quadratæ." The author regarded the species as a transition form connecting the two groups of *Trigoniæ* above-mentioned. The description of the new species was accompanied by a note on the Purbeck strata of the Vale of Wardour by the Rev. W. R. Andrews.

Meteorological Society, December 15.—Mr. G. J. Symons, F.R.S., president, in the chair.—J. Coventry, J. W. Moore,

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M.D., W. T. Paulin, J. Porter, and Capt. W. C. Smith were elected Fellows.—The following papers were read:—Report on the phenological observations for the year 1880, by the Rev. T. A. Preston, M.A., F.M.S. Agriculturally speaking the year may be considered as disappointing. Till June the weather was such as has rarely been experienced for farm operations. The severe cold of the winter broke up and mellowed the soil, and the dry open weather enabled farmers to clean their land from the excessive growth of weeds caused by the damp of the year before. The dry May was not favourable for the hay, which suffered severely in some places, but still a crop with far more real nourishment in it than would be obtained from a rank growth would have been secured had it not been for the terrible floods of July in the Midland Counties, which not only seriously injured the crop, so that it was frequently not worth the trouble of removing off the land, but also carried it entirely away in low-lying districts. The corn again, which was looking most promising till July, suffered much during that damp period, and had it not been for the subsequent fine weather would have been ruined. But the unfavourable season of 1879 produced very serious effects on vegetation, especially on trees and shrubs and their produce. The young wood of the trees was not ripened, and as a natural consequence the severe winter killed an enormous quantity of some kinds, and greatly injured others. "Laurustinus" was generally killed to the ground, and in some districts the destruction of other shrubs was severely felt. The evergreens in many cases lost large quantities of their leaves. Hollies especially are mentioned by several observers, and privet-hedges were sometimes quite leafless. With respect to fruit-trees, apples and pears in some localities (but not all) were hardly able to put forth any bloom, and the crops were consequently extremely poor. Wall-fruit was also a general failure, but this was partially owing to severe weather when the trees were in bloom, for in some instances the show of bloom was splendid. Gooseberries and currants produced enormous crops, and strawberries were very fine, but they lasted an unusually short time. Seeds generally ripened with difficulty; much of the corn could not be ground, and a great deal was mixed up with roughly-ground Indian corn and flavoured to induce the cattle to eat it. The crop of ordinary garden seeds was also far below its usual quality, and some of the favourite garden flowers were consequently very poor. Among the *special* features of the year may be mentioned the great quantity of certain insects. "Aphis" was in astonishing numbers in the early part of the year. The apple-shoots, before the leaves expanded, were in almost every case covered with the "green fly," and among wild plants the Mealy Guelder-rose was especially attacked by them. "Wasps," again, have been in extraordinary numbers, and dreadful accounts of them have been sent to the various entomological periodicals; their numbers appear to have exceeded all previous experience. The larvæ of the gooseberry moth and of the gooseberry saw-fly have also been extremely destructive; and finally, as an undoubted result of the wet season of 1879, the larvæ of the crane-fly have been a perfect plague in some localities, and sheep-licks in others. The scarcity of small birds has been universally noticed; some, no doubt, perished from the cold, but vast numbers had migrated. The enormous numbers of larks which hastened to the Eastern Counties on the outbreak of cold weather was astonishing.—On the variations of relative humidity and thermometric dryness of the air, with changes of barometric pressure at the Kew Observatory, by G. M. Whipple, B.Sc., F.R.A.S.—On the relative frequency of given heights of the barometer readings at the Kew Observatory during the ten years 1870–79, by G. M. Whipple, B.Sc., F.R.A.S.

Mineralogical Society of Great Britain and Ireland, December 23.—Prof. M. Forster Heddle, F.R.S.E., president, in the chair.—Prof. F. J. Wiik of Helsingfors was elected a corresponding member, and Messrs. Baxter, Gray, James Cunningham, R. Shaw Simpson, H. B. Guppy, and Stephen Vivian as ordinary members.—The following papers were read and discussed:—On Tyrceite, by the President.—On minerals new to Britain, by the President.—Note on Gilbertite, and on tin pseudomorphs from Belowda Mine, by J. H. Collins.—On Brochantite and its allies, by William Lemmons.—On a remarkably fine crystal of Euclase, by L. Guyot.—On the action of organic acids on minerals, by Prof. H. C. Bolton.—Note on artificial Gay-Lussite, by C. Rammelsberg.—Note on a peculiar carbonaceous substance from the Maesymarchog Colliery, by James S. Merry.

Anthropological Institute, December 14.—Edward B. Tylor, F.R.S., president, in the chair.—The election of the Rev. R. A. Bullen as a member of the Institute was announced.—Mr. W. St. Chad Boscawen read a paper on "Hittite Civilisation."

Institution of Civil Engineers, December 21.—W. H. Barlow, F.R.S., president, in the chair.—The scrutineers reported that the following gentlemen had been duly elected to fill the several offices in the Council for the ensuing year:—Mr. James Abernethy, president; Sir W. G. Armstrong, C.B., F.R.S., Sir J. W. Bazalgette, C.B., Mr. F. J. Bramwell, F.R.S., and Mr. J. Brunlees, vice-presidents; Mr. G. Berkley, Mr. G. B. Bruce, Sir John Coode, Mr. E. A. Cowper, Mr. A. Giles, Sir Charles A. Hartley, Mr. H. Hayter, Dr. W. Pole, F.R.S., Mr. R. Rawlinson, C.B., Mr. A. M. Rendel, Dr. C. W. Siemens, F.R.S., Mr. D. Stevenson, Sir W. Thomson, F.R.S., Sir Joseph Whitworth, Bart., F.R.S., and Mr. E. Woods, other members of Council.

EDINBURGH

Royal Society, December 20.—Sir Wyville Thomson, vice-president, in the chair.—Mr. John Aitken read a paper on dust, fogs, and clouds, which we give on another page.—Mr. E. Sang communicated a note on the solar eclipse of December 31, 1880, which is visible in our islands.—Dr. Marsden, in a paper on the preparation of adamantine carbon, intimated that he had at length effected the crystallisation of carbon in the cubical form. The crystals he had obtained were however far too minute to be of any commercial value.—Prof. Blyth described an electric sonometer, consisting of a wire monochord, which, traversed by an interrupted electric current, was set into strong vibrations between the poles of a horse-shoe magnet. The notes given out were loudest when they were harmonics of the fundamental interrupted note which was sounded by a vibrating tuning-fork inserted in the circuit—Dr. Haycraft communicated an explanation of the amœboid motions of masses of protoplasm, illustrating his theory by an extremely simple mechanical contrivance. An india-rubber ball perforated with several small apertures was filled with coloured white of egg, and immersed in a solution of sugar of about the same density as the albumen. When a gentle pressure was applied, the albumen was forced out in long continuous processes; and when the pressure was relaxed the processes at once retracted inside the ball again, probably in virtue of the action of the viscosity and surface-tension of the gelatinous matter. Thus was explained the retraction of the amœboid processes, after they had been expelled by contraction of the internal muscular structure.

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